Johnson's Pond Snail Round-Up

Boxford, MA October 15, 2005

Using view finders, volunteers are able to see beneath the waters surface.

Despite discouraging weather, over 25 citizens and scientists gathered in Groveland Massachusetts on October 15, 2005 to participate in the first ever Chinese Mystery Snail Round Up on Johnson's Pond. Dedicated participants braved the wind driven rains and using scopes, peered through the choppy water to the lake bottom below. With the aid of nets, and taking care not to step out of their depth least they fill their waders with chilly water, the volunteers worked their way along the shoreline collecting non-native Chinese Mystery Snails. Members from the local conservations commissions (Boxford, Haverhill, Groveland), and staff scientists from NatureServe, Coastal Zone Management and Department of Conservation and Recreation's Lakes and Ponds Program provided guidance and technical support.

Jay Cordeiro explains the difference between the native and exotic snails.

Prior to beginning the physical portion of the snail round up, the volunteers listened attentively to NatureServe's mollusk expert, Jay Cordeiro, as he gave a presentation on this particular snail species and the history of its spread in the United States. He explained that the Chinese Mystery Snail is native to Asia and is known by several scientific names including *Cipangopaludina chinensis*, *Viviparus malleatus*, and *Bellamya chinensis*. This snail and its relative the Japanese Mystery Snail (*Cipangopaludina japonica)* are the second largest snails in North America, second only to the non-native Apple Snail (*Pomacea paludosa*). Unlike native snail species that reach a maximum shell length of 40 mm, the exotic Mystery Snails can attain lengths over 65mm (~2 ¼ " inches). This slow moving herbivore prefers quiet lakes and ponds or slow moving streams. When startled or water conditions become unfavorable, the snail has a trap door that it uses to seal itself inside its shell. Another unique trait is that the female is viviparous, meaning she gives birth to live young. Juveniles remain protected inside the female's shell until they are large enough to be released. During the summer the snails move through the warm shallow waters, using their radula (rasping tongue) to scrape algae from the surface of the larger rooted plants. As the days shorten and the temperatures sink, the snails migrate into deeper waters to wait out the winter.

Although the Chinese Mystery Snail is not native to the country, is now found in all almost every state. The first reported sightings of this snail were in San Francisco in 1892. It is believed that the snail was imported into the United States by Chinese immigrants and then intentionally released to create a local food source. Additionally, snails are often released from aquariums into the wild. The snails continued to spread and finally arrived in Boston MA in 1915.

The impacts that this species have on an ecosystem, upon introduction, are still not certain. It is very likely that these snails will out-compete native snails for food and space, increase turbidity and serve as an intermediate host for parasites that effect humans (intestinal flukes and "swimmers itch").

As of now, eradication of this species is not known to be possible. Any chemicals introduced to kill the exotic snails, such as copper, would likely have a more severe impact on the native snails, since the Mystery Snail can simply close its trap door and wait until the water conditions become safe. Until the Johnson's Pond Snail Round up, there have been no recorded attempts to hand harvest snails from a waterbody (with the intent of decreasing the population). Therefore, the snail round up on Johnson's Pond is a pioneer attempt at using hand collecting to control this non-native species. This effort will be continued in June of 2006, and prior to the next round up, snails will be caught, marked and re-released. Then the number of marked snails caught on the day of the event will help determine the overall size of the population of snails in the pond. These statistics will be used over the next few years to determine if hand harvesting is a method that can make a significant dent in the population.

Susan Park from CZM measures and marks the snails for the mark/recapture portion of the study.

In an effort to increase public awareness and prevent further spread of this species, reflective metal ramp signs will be placed at access points on Johnson's Pond and several nearby waterbodies. These signs alert the visitor that the exotic snails are present in the area, and encourage them to empty bait bucket water on dry land and check all fishing and boat gear for snails prior to entering or leaving the pond.

To learn more about this event, become involved in the June 2006 Snail Round Up or report a sighting, please contact Susan Park (CZM) 617-626-1218 or Michelle Robinson (DCR) 508-792-7423 x 304 or Jay Cordeiro jay_cordeiro@natureserve.org

Have you seen this snail?

- **Large:** up to 56 mm
- **Color:** Olive green or brown with no bands
- **Black Rim:** black rim on the opening of the shell
- **Trap door:** dark thin cover over opening of shell
- **Spirals:** several spiral with very deep groves